REVIEWS OF BOOKS

WORLD RESOURCES

Food Supplies and Population Growth. Edinburgh and London, 1963. Oliver and Boyd. For the Royal Statistical Society. Pp. 85. Price 15s.

THIS IS A record of a Symposium in which the main speakers were a statistician (Dr. B. Benjamin), a physiologist (Dr. R. Passmore), a biochemist (Mr. N. W. Pirie) and an economist (Mr. Colin Clark); a well-balanced arrangement that provided a good opportunity for an authoritative treatment of not only population trends and food supply but also nutritional needs and possible new ways of satisfying them. In addition to the observations of the four speakers there were opening remarks by Professor Ritchie Calder and a brief closing summary by Professor Brinley Thomas. There is also a record of two short general discussions, to which a number of speakers contributed a few words.

Readers of the REVIEW are all too familiar with the depressing story of pressure upon resources, which the Symposium did little to brighten or alleviate (there was scant reference to birth control), so it is natural to dwell mainly upon the contributions of the physiologist and biochemist. Dr. Passmore was largely concerned with the Report of an FAO Committee on Calorie Requirements which, he pointed out, in some respects can be more precisely assessed than either world population or resources. Much of his talk was, however, concerned with obesity in industrially developed countries, although he did not make the useful point that as the average amount of energy expended is declining in these countries, with the advent of automation, individual food needs are diminishing—a hopeful prospect for the longer future as industrialization spreads.

Mr. Pirie's contribution also struck a more hopeful and constructive note. For him, the extension of the present methods of increasing food production (irrigation, fertilizers, pest control) are clearly not enough, and he recommended urgent research into new foods, both animal (by changing regional farming methods) and vegetable (by new treatment of residues not at present edible). To these one could add the use in factories of micro-organisms and of direct synthesis. He strongly made his point that research is being held up by the lack of funds, which must mean that money is being misdirected through lack of imagination concerning one of the brightest hopes of solving the world's biggest problem.

P. R. C.

Mudd, Stuart, (Editor). *The Population Crisis and the Use of World Resources.* World Academy of Arts and Sciences, 2. The Hague, 1963. W. Junk. Pp. xx + 563. Price 35 Dutch guilders.

THIS IS A remarkable and scholarly volume built up of about fifty contributions, some specially written and some reprinted, but all by true leaders in their own fields. There is a bipartite introduction by Bertrand Russell and Julian Huxley. Sir Julian's chapter is based on his speech at the New York Conference on the World Population Crisis in May 1961 which was printed in this REVIEW under the title "The Impending Crisis" (**53,** 135). Most of the other contributors are from North America. Included is the address from Dr. Radhakrishnan—then Vice-President and now President of India—to the International Conference on Planned Parenthood in Bombay in 1952. This address has been edited and no longer, sadly, contains those revealing asides which so delighted and impressed those present on that occasion. The volume is a reference book, and a text book for advanced study: it is not intended, presumably, as a book of sermons to the as yet unconverted to reality in these matters.

The volume as a whole deals with the population resources complex, including a good deal of pure demography, and discourses on abortion, sterilization and other forms of fertility control, together with chapters on land use, mineral resources, etc. The further problems, beyond the population and resources imbalance, are not treated in detail and indeed are perhaps surprisingly little recognized. But there are chapters by Frederick Osborn on "The Protection and

Improvement of Man's Genetic Inheritance" and Hermann J. Muller on "Better Genes for Tomorrow."

The tremendous array of facts fill this weighty volume, but the real distillate of wisdom is concentrated in the Russell and Huxley few introductory pages. These ought to be reprinted and widely disseminated. Their impact springs from width of discernment and evolutionary idealism, and from the care for the freedom and fulfilment of individuals. In Huxley's words "we are beginning to ruin our own spiritual and mental habitat." It is a volume to possess.

G. C. L. B.

MORTALITY

Howe, G. Melvyn. On behalf of the Royal Geographical Society. *National Atlas of Disease Mortality in the United Kingdom.* London, 1963. Nelson. Pp. 111. Price 35s.

THIS BOOK CONSISTS essentially of a series of maps to scale 1 : 3,000,000 (9 inches from Berwick to Lands End), representing regional mortalities from different causes of death. Each cause of death is presented separately for male and females (when appropriate) and each presentation consists of two maps, one for Scotland and one for England and Wales. County Boroughs, Metropolitan Boroughs, Counties and their Urban and Rural Districts are shown separately. There is no super-imposed printing on the maps themselves but transparent tracers with names are provided for the nominal identification of particular regions. The maps are in monochrome and the mortalities represented by a system of shadings. Shading methods vary between maps, and 6-, 7-, 8-, 9- and 10-level scales, representing different proportionate mortalities are used for different purposes.

The maps are based upon the statistics of the Registrars General and they represent (i) the distribution of population (ii) infant mortality (iii) total mortality and (iv) Standardized Mortality Ratios of cancer of the trachea, lung and bronchus, cancer of the stomach, cancer of the breast, cancer of the uterus, arteriosclerotic heart disease, vascular lesions affecting the central nervous system, bronchitis, pneumonia, tuberculosis, gastric and duodenal ulcers, diabetes mellitus, accidents, and suicides. Commentaries are included with each main section and Tables indicating the numbers upon which they are based are included at the end.

The book itself is attractive to handle, pleasantly laid out and printed on an opaque non-gloss paper, and reasonably priced.

Once this book has been described thus a reviewer's task becomes more difficult. Geographical representation is a pictorial method and shares its peculiarities with other similar techniques. Pictorial representations have the quality of being able to convey almost instantaneously a very large amount of information. This may be as much a function of the human mind as the method and is expressed in our ability to recognise faces and places, or handwriting, or our capacity to be entertained by the face of a cathode ray tube. At the same time pictorial representations are very difficult to analyse in an objective manner; numerical representation of any particular aspect tends to be associated with serious loss of information while the latitude offered to an observer in terms of the numbers of comparisons and analyses which can be made results in serious risk of self deception. The statisticians express this difficulty in terms of "degrees of freedom."

The author of this Atlas is clearly aware of these problems, the book is described as "experimental," the comments made are comments upon the facts and not upon their interpretation, and a section on the interpretation of statistical variation is also included. The Atlas is intended to stimulate rather than to answer questions and its method is the "instant" presentation of complex numerical patterns.

Whether or not it does in fact stimulate questions is a subjective matter but perusal is fascinating. One notes for example the Urban distribution of lung cancer in the form of dark spots upon the light background of the rural areas, while the photographic negative is found in accidental deaths in males. But enthusiasm may be curbed by realizing that the sampling variation of a large sparsely populated rural area may make all the embedded urban areas stand out consistently either as spots or as holes. Cancer of the stomach has been the subject of much previous work on geographical distribu-